NOTICE

U.S. Department of Transportation
Federal Aviation Administration

N 8110.88

1/22/01

Cancellation
Date: 1/22/02

SUBJ: RECIPROCAL ACCEPTANCE OF REPAIR DESIGN APPROVALS BETWEEN FAA AND TCCA

1. PURPOSE. This notice implements the May 6, 1998, Memorandum Of Understanding (MOU) between the Federal Aviation Administration (FAA) and Transport Canada Civil Aviation (TCCA) for the design approval of aeronautical product repairs. It provides guidance for the reciprocal acceptance of repair design data approved by the FAA, TCCA, and their designees/delegates for the performance of repairs to aeronautical products.

2. DISTRIBUTION. This notice is being distributed to the branch level of Washington headquarters; to the branch level in the Aircraft Certification Directorates; to all Flight Standards District Offices; to all Aircraft Certification Offices; to the Aircraft Certification Branch at the FAA Academy; to the Brussels Aircraft Certification Division; and to all Flight Standards International Aviation Field Offices.

3. BACKGROUND.

a. The United States and Canada have had a bilateral relationship in airworthiness since 1929. Canada was the first, and currently is the only country, with which the United States has agreed to accept maintenance, preventive maintenance, and alteration of aeronautical products performed by non-U.S. certificated persons when performed in accordance with FAA requirements. Additionally, under current procedures, the FAA considers design changes introduced through service documents to a Canadian product after U.S. type certification to be FAA approved when these changes are approved by TCCA (the exporting authority). Such documents may include production design improvements, service bulletins, structural repair manuals, and supplemental structural inspection documents.

b. Given the longstanding and close bilateral relationship between FAA and TCCA, the FAA and TCCA established a joint working group tasked with identifying whether design approvals for repairs could also be reciprocally accepted. These design approvals could then be considered approved for the purpose of performing repairs. The task group developed an MOU that set forth procedures for the reciprocal acceptance of repair design approvals in accordance with the provisions of the Bilateral Airworthiness Agreement (BAA) Schedule of Implementation Procedures between the U.S. and Canada. On May 6, 1998, the MOU was signed by representatives of the FAA and TCCA. The MOU specifically addresses the FAA acceptance of TCCA repair design approvals on U.S. products and FAA acceptance of TCCA repair design approvals and TCCA delegate repair design approvals on Canadian products. It also addresses TCCA acceptance of FAA repair design approvals on Canadian products and TCCA acceptance of FAA repair design approvals and FAA designee repair design approvals on U.S. products.

c. The objective of the MOU, in accordance with the Schedule of Implementation Procedures of the U.S./Canada BAA, is to avoid duplication of design approvals of repairs by giving maximum permissible credit for repair design data approved under each authority's system. This notice specifies what types of repair design data are considered to be FAA approved under the current bilateral agreement with Canada in accordance with the provisions of the MOU.

d. The MOU and this notice are the first phase of a multi-phase plan. Further discussions are planned to expand the acceptance of design approvals of repairs under the current bilateral agreement.

4. ACRONYMS/DEFINITIONS. The following acronyms/definitions are for the purpose of this document only. Parentheses denote which authority uses the acronym.

a. Acronyms

(1) ACO - Aircraft Certification Office (FAA)
(2) AEO - Airworthiness Engineering Organization (TCCA)
(3) DAO - Design Approval Organization (TCCA)
(4) DAR - Design Approval Representative (TCCA)
(5) DAS - Designated Alteration Station (FAA)
(6) DER - Designated Engineering Representative (FAA)
(7) DOA - Delegation Option Authorization (FAA)
(8) ECO - Engine Certification Office (FAA)
(9) FAA - Federal Aviation Administration
(10) FSDO - Flight Standards District Office (FAA)
(11) RDA - Repair Design Approval (TCCA)
(12) MOU - Memorandum of Understanding
(13) RDC - Repair Design Certificate (TCCA)
(14) SFAR - Special Federal Aviation Regulation (FAA)
(15) TCCA - Transport Canada Civil Aviation

b. Definitions

(1) Aeronautical Product - Any civil aircraft, or aircraft engine, propeller, appliance, material, part, or component to be installed thereon (as defined in the current bilateral agreement).

(2) State of Design - The state having jurisdiction over the organization responsible for the type design. For example, United States State of Design authority would apply to type certificates held by Boeing, Raytheon, Cessna, etc. Canada State of Design authority would apply to type certificates held by Bombardier, Pratt and Whitney Canada, etc.

5. LIMITATIONS.

a. The MOU covers only the acceptance of repair design data and does not address manufacturing/production, approval for return to service, use of FAA Form 337 "Major Repair and Alteration", installation acceptability, or Export Airworthiness approvals.

b. The MOU does not apply to repair design data developed to perform:

(1) Repairs on aeronautical products for which the State of Design is other than Canada or the United States (i.e. "third country products" such as those manufactured by Aerospatiale, British Aerospace, Embraer, etc.).

(2) Repairs approved in accordance FAA "field approval" procedures.

(3) Repairs performed under SFAR 36 authority, for aeronautical products where the United States is **NOT** the State of Design.

> NOTE: As repair design data developed to perform repairs under SFAR 36 is not considered "technical data approved by the [FAA] Administrator," the TCCA acceptance procedures outlined in Section 8 of this notice do not apply for SFAR 36 repairs on aeronautical products where the United States is **NOT** the State of Design. However, TCCA will accept SFAR 36 repair design data for aeronautical products where the United States is the State of Design.

6. RELATED PUBLICATIONS.

a. FAA regulations (Title 14, Code of Federal Regulations (14 CFR)):

(1) 14 CFR part 21, Certification Procedures for Products and Parts.

(2) 14 CFR § 43.17, Maintenance, preventive maintenance, and alterations performed on U.S. aeronautical products by certain Canadian persons, and Appendix A to 14 CFR part 43, Major alterations, Major repairs, and Preventive Maintenance.

(3) 14 CFR part 183, Representatives of the Administrator.

b. FAA orders and guidance material:

(1) Order 8100.8, Designee Management Handbook.

(2) Order 8110.4, Type Certification Process.

(3) Order 8110.37, Designated Engineering Representatives (DER) Guidance Handbook.

(4) Order 8300.10, Airworthiness Inspector's Handbook.

(5) Advisory Circular 21-2, Export Airworthiness Approval Procedures.

(6) Advisory Circular 21-23, Airworthiness Certification of Civil Aircraft, Engines, Propellers, and Related Products Imported to the United States.

c. TCCA regulations (CAR):

(1) Part V, Subpart 11, Approval of the Type Design of an Aeronautical Product.

(2) Part V, Subpart 13, Approval of Modification and Repair Designs.

(3) Part V, Subpart 71, Aircraft Maintenance Requirements.

d. TCCA Airworthiness Manual Chapters (AWM):

(1) Chapter 505, Delegation of Authority.

(2) Chapter 511, Approval of the Type Design of an Aeronautical Product.

(3) Chapter 513, Approval of Modification and Repair Designs.

(4) Chapter 571, Aircraft Maintenance Requirements.

e. TCCA Airworthiness Manual Advisory (AMA) 513.20, Approval of Foreign Changes to Type Design.

f. TCCA TP 12995E, Delegations Handbook for Designated Engineers and Design Approval Representatives.

NOTE: FAA Publications listed here are available on the Internet at either: http://www.faa.gov/avr/afshome.htm or http://av-info.faa.gov/dst/reference.htm. TCCA Publications listed here are available on the Internet at: http://www.tc.gc.ca/aviation/regserv/carac.

7. GENERAL.

a. Deviations to approved manufacturer repair data may be approved by either FAA or TCCA or a designee or delegate, as appropriate, and accepted in accordance with the provisions of the MOU.

b. Only properly authorized FAA personnel and DERs may approve repair design data. The MOU does not supercede any limitations on specific DERs.

c. Any repair design data developed and documented in accordance with the provisions of this notice is considered to be approved.

8. ACCEPTANCE PROCEDURES.

a. U.S. Acceptance of Canadian Repair Design Data. The following Canadian repair design approvals are considered to be "technical data approved by the [FAA] Administrator" for the purpose of performing a repair on a U.S.-registered aircraft or on an aeronautical product intended for installation on a U.S.-registered aircraft. The decision process for repairs on U.S.-registered aircraft is illustrated in Appendix 4, Flowchart Process Diagram 1.

(1) For U.S. State of Design Products.

(a) Only repair design approvals issued by TCCA are considered to be "technical data approved by the [FAA] Administrator" under the terms of the MOU. The Canadian RDC must

reference the FAA type certificate number of the product to be repaired.

(b) Repair design approvals issued solely by a TCCA delegate are not considered "technical data approved by the [FAA]Administrator" under the MOU. TCCA delegate approvals require TCCA approval or must have direct FAA or FAA designee approval before being considered to be "technical data approved by the [FAA] Administrator." See section 8c of this notice.

(2) For Canadian State of Design Products. Repair design approvals issued by either the TCCA or an appropriately authorized TCCA delegate are considered to be "technical data approved by the [FAA] Administrator" under the terms of the MOU.

(3) For other than US or Canadian ("Third Country") State of Design Products. TCCA or TCCA delegate repair design approvals are not considered "technical data approved by the [FAA] Administrator" under the terms of the MOU. Direct FAA or FAA designee review and approval is required. See FAA Order 8300.10.

> **NOTE:** A list of representative TCCA repair design approval documents issued by TCCA or delegates are presented in Table 1 of this notice.

b. Canadian Acceptance of U.S. Repair Design Data. The following U.S. repair design approvals are considered to be "TCCA approved data" for the purpose of incorporation on Canadian registered aircraft or on aeronautical products intended for installation on Canadian registered aircraft. The decision process is illustrated in Appendix 4, Flowchart Process Diagram 2 .

(1) For Canadian State of Design Products:

(a) Only repair design approvals issued by the FAA are considered to be "TCCA approved data" under the terms of the MOU.

(b) Repair design approvals issued solely by a FAA designee are not considered TCCA approved data under the MOU. An FAA designee approval requires FAA ACO approval to be considered acceptable under the MOU or it must have direct TCCA or TCCA delegate approval before being considered to be "TCCA approved data." See Section 8d of this notice.

(2) For US State of Design Products: Repair design approvals issued by either the FAA or an appropriately authorized FAA designee are considered to be "TCCA approved data" under the terms of the MOU.

(3) For other than US or Canadian ("Third Country") State of Design Products: FAA or FAA designee repair design approvals are not considered "TCCA approved data" under the terms of the MOU. In this situation, TCCA or TCCA delegate review and approval is required. See Canadian Airworthiness Manual Advisory (AMA) 513.20.

> **NOTE:** A list of representative FAA repair design approval documents issued by the FAA or FAA designees is presented in Table 2 of this notice.

c. FAA Acceptance of Canadian Delegate Approvals for U.S. State of Design Products: As indicated in section 8a(1) of this notice, TCCA delegate approvals of repair design data for U.S. State of Design products require direct TCCA approval before being considered to be "technical data

approved by the [FAA] Administrator." For such repair design data to be considered FAA approved the TCCA delegate has the following options:

(1) Obtain direct TCCA Approval (in accordance with the MOU):

(a) If the delegate has not yet issued the approval, the delegate should have it approved by the appropriate TCCA office; or

(b) If the delegate has already issued the approval, the delegate should have TCCA issue an approval letter. Appendix 2 of this notice provides a TCCA Approval Letter template.

(2) Obtain FAA Approval

(a) Use an FAA designee to approve the repair design; or

(b) Submit the repair design approval to the New York ACO for FAA review and approval, with a statement from TCCA indicating compliance with the U.S. certification basis for the product.

d. TCCA Acceptance of FAA Designee Approvals for Canadian State of Design Products. As indicated in Section 8b(1) of this notice, FAA designee approvals of repair design data require direct FAA approval before being considered to be "TCCA approved data". For such repair design data to be considered TCCA approved the FAA designee has the following options:

(1) Obtain direct FAA Approval (in accordance with the MOU):

(a) If the designee has not yet approved the data, the designee should have it approved by the FAA ACO/ECO; or

(b) If the designee has already approved the data, the designee should have the FAA ACO/ECO issue an approval letter. Appendix 1, Example of FAA Approval Letter, of this notice provides an FAA Approval of Repair letter template.

(2) Obtain TCCA Approval

(a) Use a TCCA delegate to approve the repair design; or

(b) Submit the repair design data to TCCA for review and approval, with a statement from the FAA ACO/ECO of compliance with the Canadian certification basis for the product.

e. Minor Repair Design Data

(1) Data approved by TCCA delegates for minor repairs is acceptable to the FAA for accomplishment of minor repairs on any U.S.-registered aircraft or any other aeronautical product intended for installation on a U.S.-registered aircraft.

(2) Data approved by FAA designees for minor repairs is acceptable to TCCA for accomplishment of minor repairs on any Canadian registered aircraft or any other aeronautical product

intended for installation on a Canadian registered aircraft. (Reference Canadian CAR 571.06)

(3) The appropriate definition of "minor" should be used for classification of the repair and for the determination of the appropriate data to be used for the repair (i.e. acceptable data for minor repairs, approved data for major repairs). This action is necessary because the TCCA and FAA definitions for major and minor repair differ, possibly resulting in a difference in the classification of a repair under each regulatory system. The FAA definition found in 14 CFR Part 1 and the information contained in Appendix A to 14 CFR Part 43 should be used for repairs performed on U.S.-registered aircraft and the TCCA definition from CAR Part I should be used for repairs performed on Canadian registered aircraft.

9. CONSIDERATIONS FOR REPAIRS TO ENGINES, PROPELLERS AND OTHER COMPONENTS/APPLIANCES.

a. For repairs to engines and propellers the State of Design of the engine or propeller dictates the procedures in Section 8 to be applied to obtain approval of the repair design data, **NOT** the State of Design of the aircraft that the engine or propeller may be installed on. This principle is illustrated in Figure 1 below.

Figure 1

U.S. REGISTERED AIRCRAFT				
STATE OF DESIGN OF:		REPAIR DESIGN ACCEPTABLE TO FAA		MOU ARTICLE
AIRCRAFT	REPAIRED ENGINE / PROPELLER	TCCA Approval	TCCA Delegate Approval	
U.S.	U.S.	Yes	No	V(c)(2)
U.S.	Canada	Yes	Yes	V(c)(1)
U.S.	Other	No	No	II
Canada	U.S.	Yes	No	V(c)(2)
Canada	Canada	Yes	Yes	V(c)(1)
Canada	Other	No	No	II
Other	U.S.	Yes	No	V(c)(2)
Other	Canada	Yes	Yes	V(c)(1)
Other	Other	No	No	II

b. For Repairs to Aeronautical Products that do not have a Type Certificate or a TSO Approval:

(1) These components or products may be approved as part of the aircraft, engine, or propeller Type Certificate or under a subsequent applicable Supplemental Type Certificate. The State of Design for the type certificated product (i.e. the aircraft, aircraft engine, or propeller) on which the component is approved (or the State of Design for the applicable Supplemental Type Certificate) will govern the

procedures used to obtain approval of the repair design data, **NOT** the state of design of the repaired (non-TC'd) product or component itself.

(2) A repair to an digital engine control designed by a “third” country (i.e. State of Design is a country “other” than Canada or United States) on an engine for which the United States is the State of Design can be used to illustrate this concept. The state of design of the aircraft has no bearing on the procedures to be used in this example. In this case, it is the State of Design *of the engine* (the United States) that will be used to determine the procedures to be used under the MOU, not the State of Design of either the repaired engine control or the aircraft that the engine may be installed on.

10. TABLES. The following tables outline the design approval documentation that is normally issued in support of a repair approved by TCCA (Headquarters or Regional Offices) or by a TCCA delegate. An example of the Repair Design Certificate listed is provided in Appendix 3, Example Form.

Table 1 - Canadian Repair Design Approvals / Typical Documentation

- This table indicates the typical types of approval documentation issued by either TCCA or TCCA delegates to indicate approval of data for repair designs on aeronautical products.
- An example of the most common "non-Type Certificate holder" approval, the Repair Design Certificate (RDC), is provided in Appendix 3.
- In case of uncertainty with respect to the format or acceptability of the Canadian repair design documentation provided or approvals in French, consult with the FAA New York ACO.

ORGANIZATION APPROVING REPAIR DESIGN (TCCA OR TCCA DELEGATE)	REPAIR DESIGN APPROVAL DOCUMENTATION		COMMENTS
	Typical	**Possible**	
TCCA	• Repair Design Certificate	• Transport Canada approval letter (for approvals issued prior to 1991)	These approvals *may* be based on a recommendation for approval from a TCCA delegate. Between 1 January 1991 and 1 December 1998, Repair Design Certificates (RDCs) were called Repair Design Approvals (RDAs).
Type Certificate Holder (DAO)	• Service Bulletin, or • Engineering Order (or equivalent), or Revisions to Instructions for Continued Airworthiness	• Repair Design Certificate	Repair design approvals issued by the Type Certificate holder (and its delegates) are considered "FAA approved" data under 14 CFR § 21.29
Non-Type Certificate Holder: • Engineering organization (**DAO**) • Individual consultant / Engineer (**DAR**) • Airline / Air Carrier Operator (**AEO**)	• Repair Design Certificate, or • Engineering Order (or equivalent)- acceptable if accompanied by a TCCA letter or document referencing the FAA TC	• TCCA AE-100 (statement of compliance form) - for approvals issued before 1991 only	

Table 2 – U.S. Repair Design Approvals / Typical Documentation

- This table indicates the typical types of approval documentation issued by either FAA or FAA designees to indicate approval of data for repair designs on aeronautical products.
- In case of uncertainty with respect to the format or acceptability of the U.S. repair design or the documentation provided, consult with TCCA Aircraft Certification, Regulatory Standards Division or any TCCA Regional Aircraft Certification Office.

ORGANIZATION APPROVING REPAIR DESIGN (FAA OR FAA DESIGNEE/DELEGATE)	REPAIR DESIGN APPROVAL DOCUMENTATION		COMMENTS
	Typical	**Possible**	
FAA	• FAA approval letter		These approvals *may* be based on a recommendation for approval from an FAA designee.
Type Certificate Holder • Designated Engineering Representative (**DER**) • Delegation Option Authorization (**DOA**)	• Service Bulletin, or • Engineering Order (or equivalent), or • Instructions for Continued Airworthiness (SRM, etc.)	• FAA Form 8110-3 • FAA Form 8110-ORG	Repair design approvals issued by the Type Certificate holder (and its designees/delegates) are considered "TCCA approved" data under CAR Part V, Subpart 71 & AWM 571.06.
Non-Type Certificate Holder: • Individual Consultant/ Engineer (**DER**) **or** • Repair Stations/ Air Carriers/ Operators/ Manufacturers (**DAS**)	• FAA Form 8110-3, or • Engineering Order (or equivalent)	• Service bulletin • FAA Form 8110-ORG	

11. NOTICE OF INCORPORATION. The information identified in this notice will be incorporated into an appropriate order, and if necessary an advisory circular.

12. REQUEST FOR INFORMATION. Additional information or questions concerning this notice can be obtained from the Aircraft Certification Service, Aircraft Engineering Division, Certification Procedures Branch, AIR-110, 202-267-9580

[original signed by]

James C. Jones
Manager, Aircraft Engineering Division
Aircraft Certification Service

APPENDIX 1. EXAMPLE OF FAA APPROVAL LETTER

(Reference Section 8(d)(1)(b))

Any Company
AnyWhere, USA

Data Approval of Repair

Dear Mr./Ms. :

This letter is in reference to your request for Federal Aviation Administration (FAA) approval for the subject repair performed on XXXXXXXXX as installed on a Canadian “C” registered MAKE/MODEL aircraft (or "as installed on MAKE/MODEL engine," or "as installed on MAKE/ MODEL propeller," as appropriate).

We have reviewed the US certification basis for this MAKE/MODEL aircraft (or "engine" or "propeller" as appropriate) and find that the repair as defined in Report XXX (or FAA Form 8110-3) as performed still renders the aircraft (or "engine" or "propeller," as appropriate) in compliance with all applicable Federal Aviation Regulations. In making this finding we have also taken into account the Canadian Certification Basis.

Therefore this repair and the data used to perform the repair on XXXXX installed on a XXXXXX is considered FAA approved.

If you have any questions relating to the above information please call Mr. XXXX at (XXX) XXX-XXXX.

Sincerely,

XXXXX
Manager, XXXX Aircraft Certification
Office

Delegated Engineers Inc.

APPENDIX 2. EXAMPLE OF TCCA APPROVAL LETTER

(Reference Section 8(c)(1)(b))

Transport Canada
< > Region

Transports Canada
Region de < >

Your file #

Aircraft Certification Office
< Address>

Our file #

Date

57 Airport Drive
Anytown, Province
Canada Z2A 2A2

Subject: Repair Design Certificate O-RA00-xxx/D, Issue x

The subject Repair Design Certificate, issued in accordance with your delegation, and applicable to the <aircraft/engine/product> has been reviewed by Transport Canada Aircraft Certification. When repaired under this approval, the <aircraft/engine/product> is found to be in compliance with the applicable airworthiness requirements specified in the TCCA Type Certificate <applicable TCCA TC #> and FAA Type Certificate <applicable FAA TC #>.

Therefore, the subject repair is considered TCCA approved data for the purpose of the FAA / TCCA "Memorandum of Understanding for Design Approval of Aeronautical Product Repairs" dated May 6, 1998.

Should you have any questions or require additional information, please contact Mr. / Ms. at (XXX) XXX-XXXX.

[name / signature]
Aircraft Certification Engineer
[or)
Regional Manager, Aircraft Certification
< > Regional Office

Canada

Transport Canada Transports Canada

Department of Transport

Repair Design Certificate

This approval is issued to:

Delegated Engineering Inc.
P. O. Box 513
Anytown, ON Z5A 2A2

Number: O-RH00-xxx/D
Issue No.: 1
Approval Date: January 1, 2000
Issue Date: January 1, 2000

Responsible Office: Ontario

Aircraft/Engine Type or Model: de Havilland DHC-8-402

Registration/Serial No.: C-xxxx / 4999

Canadian Type Certificate or Equivalent: A-142

Description of Repair Design Change: Corrosion repair

Installation/Operating Data, Required Equipment and Limitations:

Repair must be in accordance with Delegated Engineering Inc. Service Instruction 00-xxxx, Revision 0, dated December 28, 1999, or later approved revision.

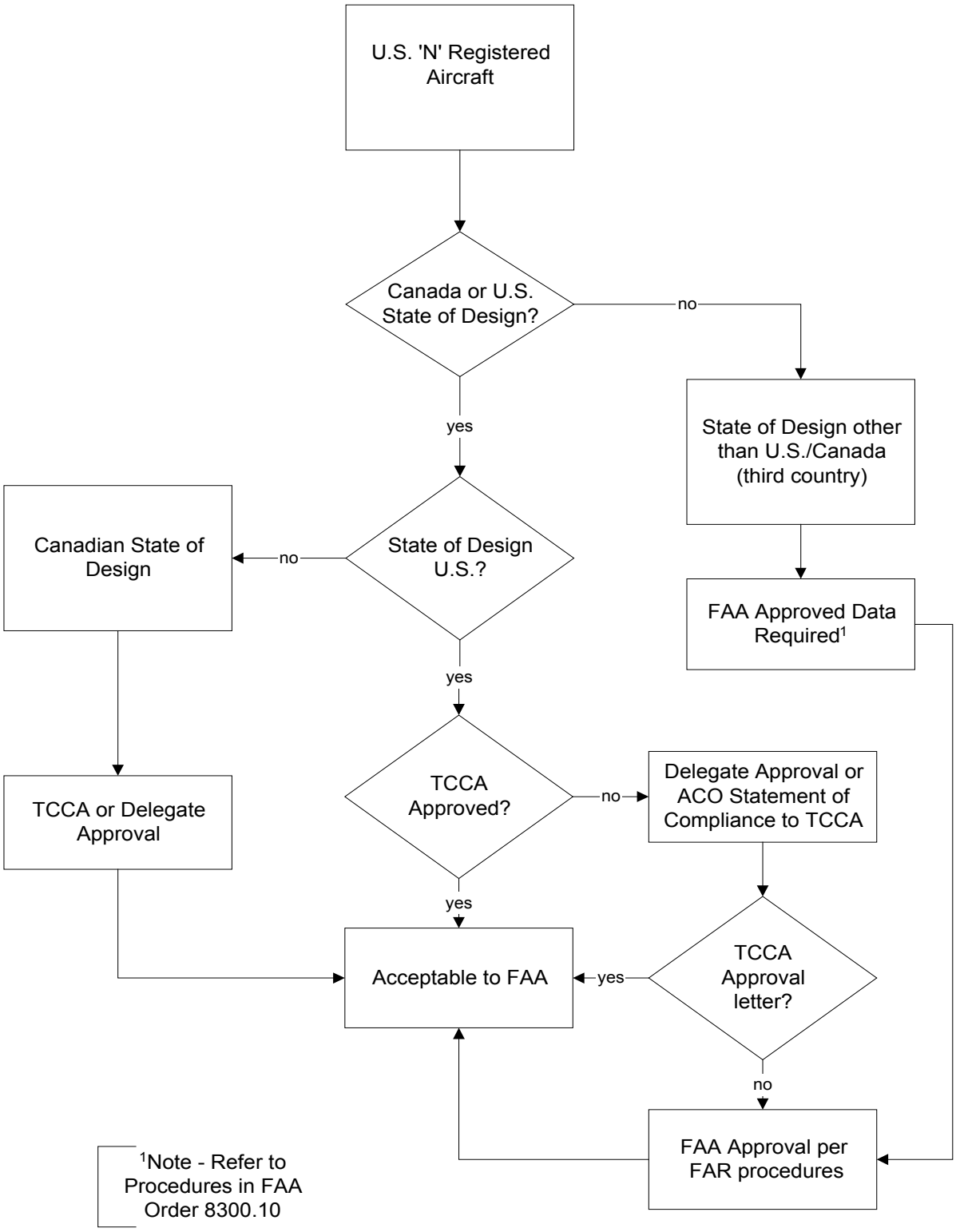
Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this repair, the installer shall establish that the interrelationship between this repair and any other modification(s) incorporated **will not** adversely affect the airworthiness of the modified product.

A. Martin
DAR ### / DE ##
For Minister of Transport

Canada

APPENDIX 4. FLOWCHART PROCESS DIAGRAM 1

-U.S. Acceptance of Canadian Repair Design-



APPENDIX 4. FLOWCHART PROCESS DIAGRAM 2

-Canadian Acceptance of U.S. Repair Design-